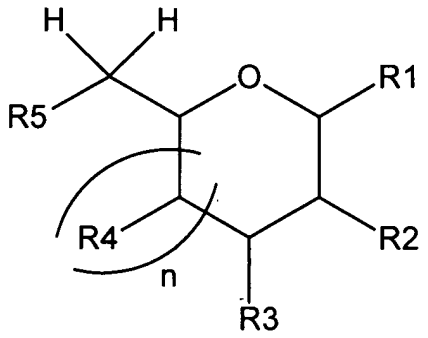
AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-30. (Cancelled).

31. (New) A compound of formula I



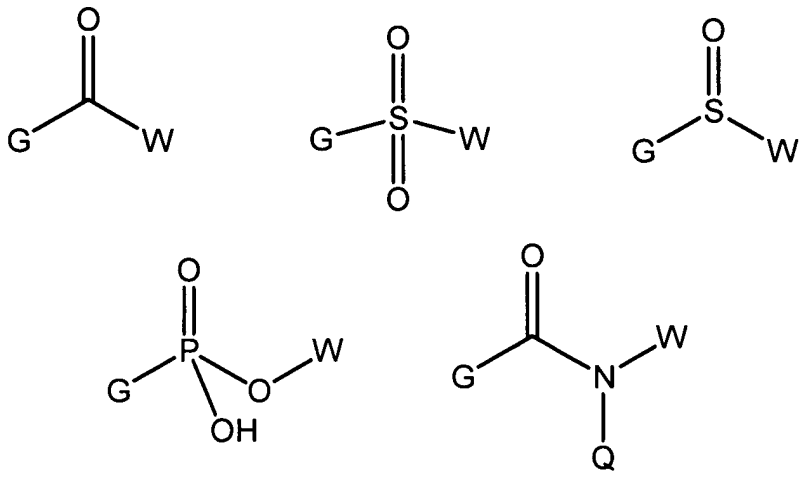
formula I

Being a modified monosaccharide, wherein,

n is 0 or 1;

R1 is selected from the group consisting of hydrogen or -N(Z)Y wherein;

Y is selected from the following, where G denotes the point of connection to the nitrogen atom in N(Z)Y;



Z is selected from hydrogen or W;

Q is selected from hydrogen or W;

the groups W are independently selected from the group consisting of:

a) a substituted or unsubstituted alkyl moiety of 1 to 20 atoms;

b) a substituted or unsubstituted alkenyl, or alkynyl moiety of 2 to 20 atoms;

c) a substituted or unsubstituted heteroalkyl moiety of 2 to 20 atoms in which the hetero atoms are selected from the group consisting of N, O and S;

d) a substituted or unsubstituted monocyclic or bicyclic aryl moiety of 6 to 12 carbon atoms;

e) a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety of 5 to 20 atoms, containing 1 to 4 hetero atoms selected from the group N, O and S;

f) an arylalkyl moiety of 6 to 20 atoms comprising at least 1 substituted or unsubstituted monocyclic or bicyclic aryl moiety and a substituted or unsubstituted alkyl moiety;

g) an heteroarylalkyl moiety of 5 to 20 atoms comprising a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety containing 1 to 4 hetero atoms selected from the group N, O and S, and a substituted or unsubstituted alkyl moiety;

the groups R2, R3, R4 and R5 are independently selected from –OH, -OW and –N(Z)Y wherein at least one of the groups R2, R3, and R4 is -N(Z)Y, and at least one of the groups R2, R3, R4 and R5 is –OW and at least one of the groups R2, R3, R4 and R5 is -OH,

Z and Y optionally combine with N to form a ring,

such that where more than one of the groups R2, R3, R4 and R5 is OW, each instance of OW is different.

32. (New) The compound of claim 31, wherein the ring is selected from the pyran or furan form and the anomeric center is selected from the α or β configuration.

33. (New) The compound of claim 31, wherein the groups Z and Y are combined to form a monocyclic or bicyclic ring structure of 4 to 10 atoms.

34. (New) The compound of claim 33, wherein the ring structure is further substituted with W groups.

35. (New) The compound of claim 31 wherein W is substituted with a moiety selected from the group consisting of OH, NO, NO_2, NH_2, N_3, halogen, CF_3, CHF_2, CH_2F, nitrile, alkoxy, aryloxy, amidine, guanidiniums, carboxylic acid, carboxylic acid ester, carboxylic acid amide, aryl, cycloalkyl, heteroalkyl, heteroaryl, aminoalkyl, aminodialkyl, aminotrialkyl, aminoacyl, carbonyl, substituted or unsubstituted imine, sulfate, sulfonamide, phosphate, phosphoramide, hydrazide, hydroxamate, hydroxamic acid; wherein the terms alkyl, aryl, heteroalkyl and heteroaryl are as defined in claim 31.

36. (New) The compound of claim 31, wherein Z is hydrogen.

37. (New) The compound of claim 31 wherein at least three of the groups R2, R3, R4 and R5 are selected from –OW or -N(Z)Y;

38. (New) The compound of claim 31 wherein R1 is hydrogen.

39. (New) The compound of claim 38 wherein independently at least two of R2, R3, R4, or R5 are –OW.

40. (New) The compound of claim 38 wherein at least two of R2, R3, R4, or R5 is -N(Z)Y.

41. (New) The compound of claim 31 wherein R1 is -N(Z)Y.

42. (New) The compound of claim 41 wherein at least one of R2, R3, R4, or R5 is -N(Z)Y.

43. (New) The compound of claim 41 wherein at least two of R2, R3, R4, or R5 is -N(Z)Y.

44. (New) The compound of claim 41 wherein at least two of R2, R3, R4, or R5 are -OW.

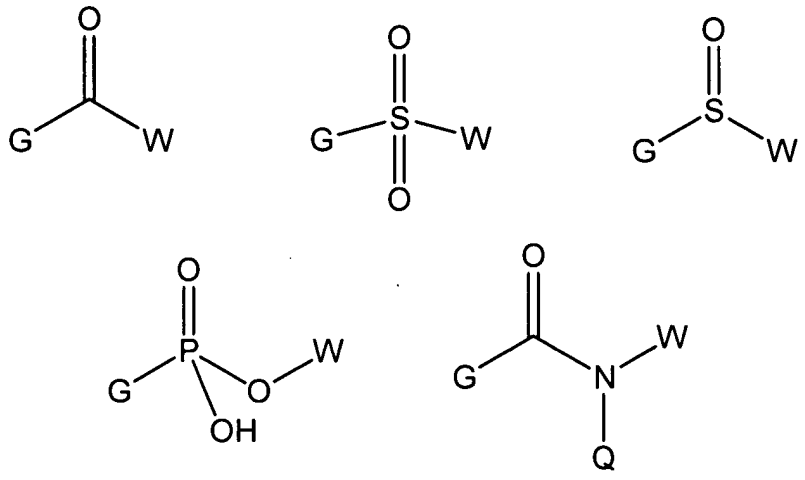
45. (New) A method of synthesis of compounds of claim 38, wherein n is 1, comprising the step of reducing a synthetic intermediate of formula III,

in which

V is bromine or chlorine,

R5, R4, R3, and R2 are selected from the group consisting of OH, O-acyl, N_3, NHDde, NHDTPM, NHZ, NHBOC, phthalimide, OW, N(Z)Y and an O-protecting group,

Y is selected from the following, where G denotes the point of connection to the nitrogen atom in N(Z)Y;



Z is selected from hydrogen or W;

Q is selected from hydrogen or W;

the groups W are independently selected from the group consisting of:

a) a substituted or unsubstituted alkyl moiety of 1 to 20 atoms;

b) a substituted or unsubstituted alkenyl, or alkynyl moiety of 2 to 20 atoms;

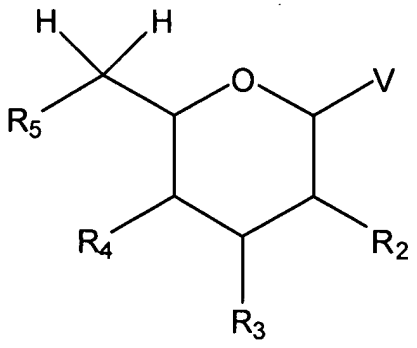
c) a substituted or unsubstituted heteroalkyl moiety of 2 to 20 atoms in which the hetero atoms are selected from the group consisting of N, O and S;

d) a substituted or unsubstituted monocyclic or bicyclic aryl moiety of 6 to 12 carbon atoms;

e) a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety of 5 to 20 atoms, containing 1 to 4 hetero atoms selected from the group N, O and S;

f) an arylalkyl moiety of 6 to 20 atoms comprising at least 1 substituted or unsubstituted monocyclic or bicyclic aryl moiety and a substituted or unsubstituted alkyl moiety ;

g) an heteroarylalkyl moiety of 5 to 20 atoms comprising a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety containing 1 to 4 hetero atoms selected from the group N, O and S, and a substituted or unsubstituted alkyl moiety;



general formula III

46. (New) The method of claim 45, wherein the O- protecting groups comprise a benzylidene acetal which protects two adjacent oxygens.

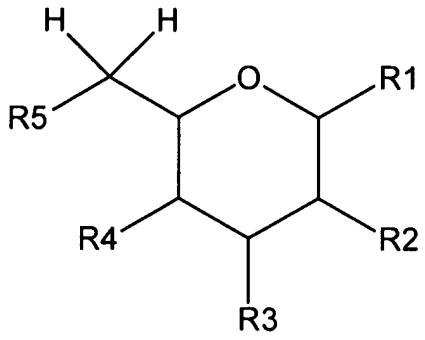
47. (New) A method of synthesis of compounds according to claim 41, in which n is 1, comprising the step of reacting a compound of formula III with an azide nucleophile, to form an anomeric azide and reduction of the anomeric azide to form an anomeric amine and reaction of the anomeric amine with an electrophile.

48. (New) A method of combinatorial synthesis of compounds of claim 31, wherein n is 1, comprising the steps of:

(a) immobilizing a compound of formula IV onto a support, through a free hydroxyl or amino function;

(b) selectively removing a protecting group from a protected hydroxyl functionality to provide a free hydroxyl function; and

(c) alkylating said free hydroxyl



function; general formula IV

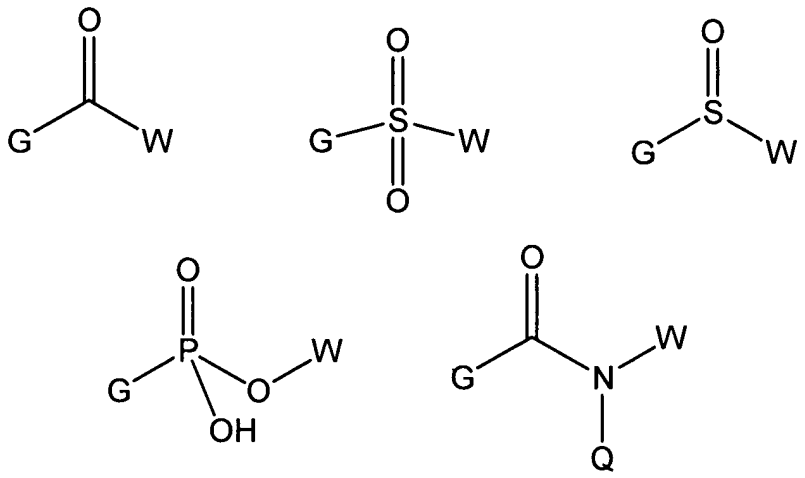
wherein

R1 is selected from the group consisting of hydrogen and -N(Z)Y

wherein;

When R1 is –N(Z)Y, then:

Y is selected from the following, where G denotes the point of connection to the nitrogen atom in N(Z)Y;



Z is selected from hydrogen or W;

Q is selected from hydrogen or W;

the groups W are independently selected from the group consisting of:

a) a substituted or unsubstituted alkyl moiety of 1 to 20 atoms;

b) a substituted or unsubstituted alkenyl, or alkynyl moiety of 2 to 20 atoms;

c) a substituted or unsubstituted heteroalkyl moiety of 2 to 20 atoms in which the hetero atoms are selected from the group consisting of N, O and S;

d) a substituted or unsubstituted monocyclic or bicyclic aryl moiety of 6 to 12 carbon atoms;

e) a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety of 5 to 20 atoms, containing 1 to 4 hetero atoms selected from the group N, O and S;

f) an arylalkyl moiety of 6 to 20 atoms comprising at least 1 substituted or unsubstituted monocyclic or bicyclic aryl moiety and a substituted or unsubstituted alkyl moiety;

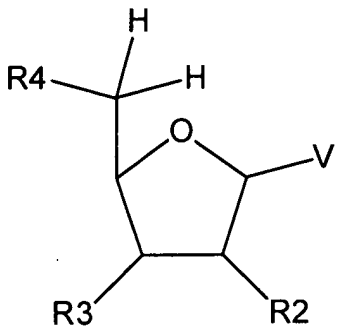
g) an heteroarylalkyl moiety of 5 to 20 atoms comprising a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety containing 1 to 4 hetero atoms selected from the group N, O and S, and a substituted or unsubstituted alkyl moiety;

R5, R4, R3, and R2 are selected from the group consisting of OH, O-acyl, N_3, NHDde, NHDTPM, NHZ, NHBOC, phthalimide, OW, N(Z)Y and an O-protecting group.

49. (New) The method of claim 48 wherein the support is selected from the group consisting of tentagel, wang resin, MBHA resin, aminomethylpolystyrene, rink amide resin DOX-mpeg, and polyethylene glycol.

50. (New) A method of synthesis of compounds according to claim 40, in which n is 0, comprising the step of reacting a compound of formula V in the presence of a lewis

acid with an azide source to form an anomeric azide, reduction of the anomeric azide to form an anomeric amine and reaction of the anomeric amine with an electrophile;



general formula V

in which V is -OAcyl,

R4, R3, and R2 are selected from the group consisting of OH, O-acyl, N_3, NHDde, NHDTPM, NHZ, NHBOC, phthalimide,OW, N(Z)Y and O-protecting group,

the groups W are independently selected from the group consisting of:

a) a substituted or unsubstituted alkyl moiety of 1 to 20 atoms;

b) a substituted or unsubstituted alkenyl, or alkynyl moiety of 2 to 20 atoms;

c) a substituted or unsubstituted heteroalkyl moiety of 2 to 20 atoms in which the hetero atoms are selected from the group consisting of N, O and S;

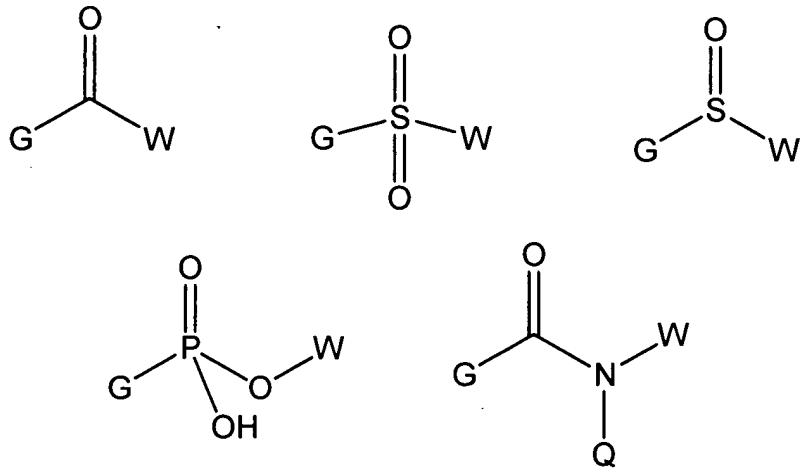
d) a substituted or unsubstituted monocyclic or bicyclic aryl moiety of 6 to 12 carbon atoms;

e) a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety of 5 to 20 atoms, containing 1 to 4 hetero atoms selected from the group N, O and S;

f) an arylalkyl moiety of 6 to 20 atoms comprising at least 1 substituted or unsubstituted monocyclic or bicyclic aryl moiety and a substituted or unsubstituted alkyl moiety;

g) an heteroarylalkyl moiety of 5 to 20 atoms comprising a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety containing 1 to 4 hetero atoms selected from the group N, O and S, and a substituted or unsubstituted alkyl moiety;

Y is selected from the following, where G denotes the point of connection to the nitrogen atom in N(Z)Y;



Z is selected from hydrogen or W; and

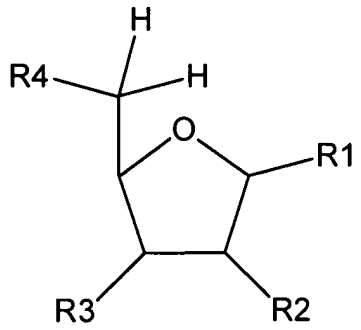
Q is selected from hydrogen or W.

51. (New) A method of combinatorial synthesis of compounds of claim 31, wherein n is 0, comprising the steps of

(a) immobilizing a compound of formula VI onto a support, through a free hydroxyl or amino function;

(b) selectively removing a protecting group from a protected hydroxyl functionality to provide a free hydroxyl function; and

(c) alkylating said free hydroxyl function;

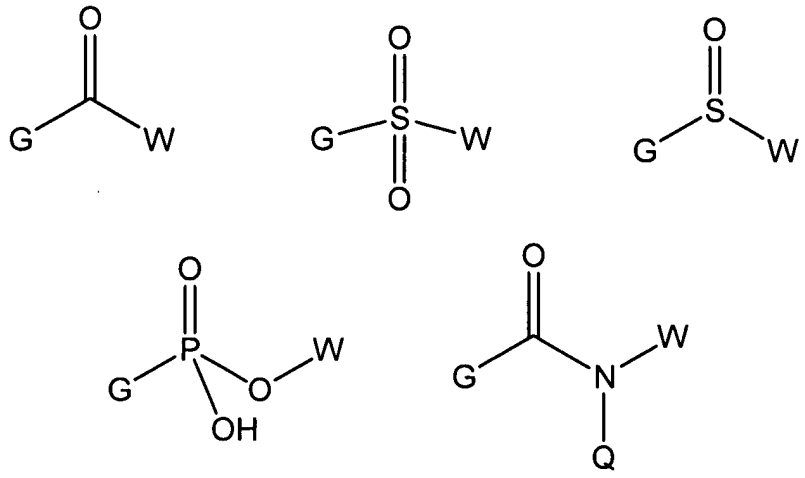


general formula VI

Wherein R1 is selected from the group consisting of hydrogen and -N(Z)Y wherein;

When R1 is –N(Z)Y, then:

Y is selected from the following, where G denotes the point of connection to the nitrogen atom in N(Z)Y;



Z is selected from hydrogen or W;

Q is selected from hydrogen or W;

the groups W are independently selected from the group consisting of:

a) a substituted or unsubstituted alkyl moiety of 1 to 20 atoms;

b) a substituted or unsubstituted alkenyl, or alkynyl moiety of 2 to 20 atoms;

c) a substituted or unsubstituted heteroalkyl moiety of 2 to 20 atoms in which the hetero atoms are selected from the group consisting of N, O and S;

d) a substituted or unsubstituted monocyclic or bicyclic aryl moiety of 6 to 12 carbon atoms;

e) a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety of 5 to 20 atoms, containing 1 to 4 hetero atoms selected from the group N, O and S;

f) an arylalkyl moiety of 6 to 20 atoms comprising at least 1 substituted or unsubstituted monocyclic or bicyclic aryl moiety and a substituted or unsubstituted alkyl moiety;

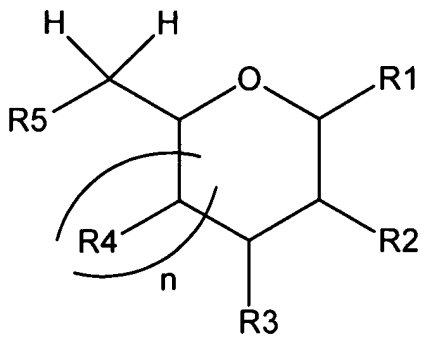
g) an heteroarylalkyl moiety of 5 to 20 atoms comprising a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety containing 1 to 4 hetero atoms selected from the group N, O and S, and a substituted or unsubstituted alkyl moiety; and

R4, R3, and R2 are selected from the group consisting of OH, O-acyl, N_3, NHDde, NHDTPM, NHZ, NHBOC, phthalimide, OX2, N(T)Y and O-protecting group.

52. (New) The method of claim 51, wherein the support is selected from the group consisting of tentagel, wang resin, MBHA resin, aminomethylpolystyrene, rink amide resin DOX-mpeg,and polyethylene glycol.

53. (New) A method of solution phase combinatorial synthesis of compounds of claim 31, comprising the step of alkylating a free hydroxyl on a compound of formula IV according to claim 48, or formula VI according to claim 51.

54. (New) A compound of formula 2



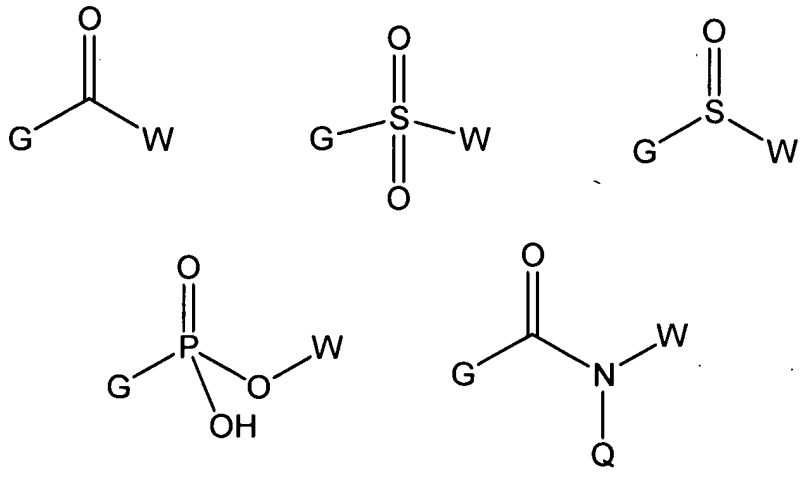
formula 2

Wherein,

n is 0 ;

R1 is selected from the group consisting of hydrogen or -N(Z)Y wherein;

Y is selected from the following, where G denotes the point of connection to the nitrogen atom in N(Z)Y;



Z is selected from hydrogen or W;

Q is selected from hydrogen or W;

the groups W are independently selected from the group consisting of:

a) a substituted or unsubstituted alkyl moiety of 1 to 20 atoms;

b) a substituted or unsubstituted alkenyl, or alkynyl moiety of 2 to 20 atoms;

c) a substituted or unsubstituted heteroalkyl moiety of 2 to 20 atoms in which the hetero atoms are selected from the group consisting of N, O and S;

d) a substituted or unsubstituted monocyclic or bicyclic aryl moiety of 6 to 12 carbon atoms;

e) a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety of 5 to 20 atoms, containing 1 to 4 hetero atoms selected from the group N, O and S;

f) an arylalkyl moiety of 6 to 20 atoms comprising at least 1 substituted or unsubstituted monocyclic or bicyclic aryl moiety and a substituted or unsubstituted alkyl moiety;

g) an heteroarylalkyl moiety of 5 to 20 atoms comprising a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety containing 1 to 4 hetero atoms selected from the group N, O and S, and a substituted or unsubstituted alkyl moiety;

When R1 is –N(Z)Y, then at least one of the groups R2, R3, R4 and R5 is -N(Z)Y, and the others of the groups R2, R3, R4 and R5 are independently selected from hydrogen, -OH, -OW, -N(Z)Y,

When R1 is H, then at least one of the groups R2, R3, R4 and R5 is –OW and at least one of the groups R2, R3, R4 or R5 is -N(Z)Y, and the others of the groups R2, R3, R4 and R5 are independently selected from hydrogen, -OH, -OW, -N(Z)Y,

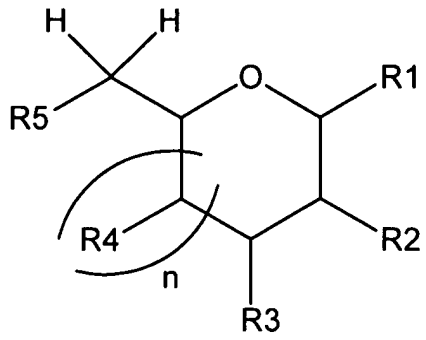
Z and Y optionally combine with N to form a ring,

With the provisos that:

W may not be another carbohydrate ring, a cyclitol ring or contain another carbohydrate ring, and

all of the W substituents may not be the same.

55. (New) A compound of formula 3



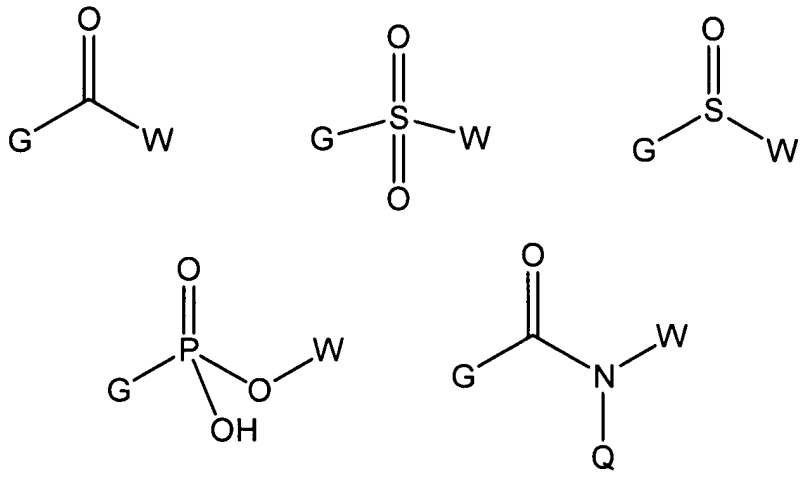
formula 3

Wherein,

n is 1;

R1 is selected from the group consisting of hydrogen or -N(Z)Y wherein;

Y is selected from the following, where G denotes the point of connection to the nitrogen atom in N(Z)Y;



Z is selected from hydrogen or W;

Q is selected from hydrogen or W;

the groups W are independently selected from the group consisting of:

a) a substituted or unsubstituted alkyl moiety of 1 to 20 atoms;

b) a substituted or unsubstituted alkenyl, or alkynyl moiety of 2 to 20 atoms;

c) a substituted or unsubstituted heteroalkyl moiety of 2 to 20 atoms in which the hetero atoms are selected from the group consisting of N, O and S;

d) a substituted or unsubstituted monocyclic or bicyclic aryl moiety of 6 to 12 carbon atoms;

e) a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety of 5 to 20 atoms, containing 1 to 4 hetero atoms selected from the group N, O and S;

f) an arylalkyl moiety of 6 to 20 atoms comprising at least 1 substituted or unsubstituted monocyclic or bicyclic aryl moiety and a substituted or unsubstituted alkyl moiety;

g) an heteroarylalkyl moiety of 5 to 20 atoms comprising a substituted or unsubstituted monocyclic or bicyclic heteroaryl moiety containing 1 to 4 hetero atoms selected from the group N, O and S, and a substituted or unsubstituted alkyl moiety;

When R1 is –N(Z)Y, then at least one of the groups R2, R3, R4 and R5 is -N(Z)Y, and the others of the groups R2, R3, R4 and R5 are independently selected from hydrogen, -OH, -OW, -N(Z)Y,

When R1 is H, then at least one of the groups R2, R3, R4 and R5 is –OW and at least one of the groups R2, R3, R4 or R5 is -N(Z)Y, and the others of the groups R2, R3, R4 and R5 are independently selected from hydrogen, -OH, -OW, -N(Z)Y,

Z and Y optionally combine with N to form a ring,

With the provisos that:

a. W may not be another carbohydrate ring, a cyclitol ring or contain another carbohydrate ring; and

b. all of the W substituents may not be the same.